

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

REC'D 10 SEP 2004


WIPO

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| Applicant's or agent's file reference<br>P59326PC00  |  | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |  |
| International application No.<br>PCT/NL 03/00462   | International filing date (day/month/year)<br>23.06.2003 | Priority date (day/month/year)<br>21.06.2002   |  |
| International Patent Classification (IPC) or both national classification and IPC<br>B01J37/02 |  |  |  |
| Applicant<br>OTB GROUP B.V.  |  |  |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 8 sheets, including this cover sheet.
  - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 32 sheets.

3. This report contains Indications relating to the following items:
  - I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☒ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the International application
  - VIII ☐ Certain observations on the international application

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| Date of submission of the demand<br><br>31.12.2003  | Date of completion of this report<br><br>09.09.2004                        |
| Name and mailing address of the International preliminary examining authority:<br><br> European Patent Office - P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk - Pays Bas<br>Tel. +31 70 340 - 2040 Tx: 31 651 epo nl<br>Fax: +31 70 340 - 3016 | Authorized Officer<br><br>Zuurdeeg, B<br><br>Telephone No. +31 70 340-4467 |



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/NL 03/00462

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

**Description, Pages**

1-26 received on 09.08.2004 with letter of 05.08.2004

**Claims, Numbers**

1-50 received on 09.08.2004 with letter of 05.08.2004

**Drawings, Sheets**

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/NL 03/00462

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

**see separate sheet**

6. Additional observations, if necessary:

**IV. Lack of unity of invention**

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.  
☐ paid additional fees.  
☐ paid additional fees under protest.  
☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.  
☒ not complied with for the following reasons:

**see separate sheet**

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.  
☐ the parts relating to claims Nos. .

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

|                               |             |                |
|-------------------------------|-------------|----------------|
| Novelty (N)                   | Yes: Claims | 1-33           |
|                               | No: Claims  | 34,38,41,48-50 |
| Inventive step (IS)           | Yes: Claims |                |
|                               | No: Claims  | 1-50           |
| Industrial applicability (IA) | Yes: Claims | 1-50           |
|                               | No: Claims  |                |

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

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**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NL 03/00462

**Re Item I**

**Basis of the report**

The applicant has replaced the wording "manufacturing a catalyst" of original claims 1 and 35 (now claim 34) by "depositing a layer on a substrate".

No basis for this replacement could be found in the specification as filed.

Consequently, the replacement of this wording introduces subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT.

**Re Item IV**

**Lack of unity of invention**

1. The separate (groups) of inventions are:
  - I) Claims 1-47  
Method and apparatus for manufacturing a catalyst
  - II) Claims 48-50  
Catalyst
2. For any set of independent claims to be unitary, it is essential that they are linked by a common general inventive concept. The present set of claims does not fulfill this requirement in the following respects:
  - 2.1 The application contains independent claims belonging to the following different categories:
    - method for the manufacturing a catalyst (independent claim 1)
    - apparatus for manufacturing a catalyst (independent claim 34)
    - catalyst (independent claim 48)

In the present case of claims belonging to different categories, only the product may constitute a link. Therefore, the requirement of unity may only be satisfied under the pre-condition of the product being novel and inventive. However, the

catalyst as defined in claim 48 is already known from DE-A-196 10 015, example 1, WO-A-01/96234, examples 3-7 and Brault et al., page 71, lines 1-17.

With the catalyst defined in claim 48 being not novel, independent claims 1 and 34 on the one hand and independent claim 48 on the other hand are not so linked as to form a common general inventive concept.

Hence, the application contains multiple (groups) of inventions (conform item 1) which are not unitary in the meaning of Rule 13.1 PCT.

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Reference is made to the following documents:**

- D1: DE 196 10 015 A (HOECHST AG) 18 September 1997 (1997-09-18) cited in the application
- D2: EP-A-1 034 843 (SULZER METCO AG; SULZER CHEMTECH AG (CH)) 13 September 2000 (2000-09-13) cited in the application
- D3: BRAULT P ET AL: 'The use of plasmas in catalysis: catalyst preparation and hydrogen production' ANNALES DE CHIMIE - SCIENCE DES MATERIAUX., vol. 26, no. 4, July 2001 (2001-07), pages 69-77, XP004341615 MASSON ET CIE. PARIS., FR cited in the application
- D4: WO 01 32949 A (ELLINGHORST GUIDO; BAALMANN ALFRED (DE); BUSKE CHRISTIAN (DE); FOE) 10 May 2001 (2001-05-10) cited in the application
- D5: WO 01 96234 A (CONOCO INC) 20 December 2001 (2001-12-20) cited in the application

**2. The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of claims 1-50 is not new in the sense of Article 33(2) PCT or does not involve an inventive step in the sense of Article 33(3) PCT in view of at least one of the documents D1 to D5.**

**2.1 Document D1 discloses the subject-matter of independent claim 34, see column 5, lines 29 to column 6, line 2, claim 53, example 1 and figures 1 and 2 (substrate**

= 1; processing chamber = 4, plasma cascade source = 5, deposition material = Spritzpulver, plasma = 26, substrate positioning means = 6); to deposit thick layers, multiple plasma spray apparatus arrangements could be used (see column 12, lines 1-5). The apparatus of D1 is **suitable** for depositing two materials A and B (see PCT Guidelines, 5.23).

- 2.2 Document D5 (see examples 3-7) takes away the novelty of claims 48 and 50 (see point 3.1 below).

A claim defining a product in terms of a process is to be construed as a claim to the product as such (see PCT Guidelines A5.26[1]).

- 2.3 Document D3 is detrimental to the novelty of claims 48-50, see page 71, lines 1-17.
- 2.4 Dependent claims 35-47 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, are either new or involve an inventive step with respect to the prior art named in the present proceedings.
- 2.5 The reasons therefor are that the additional features of the said claims are either directly known from documents D1-D5, or is a combination of features obvious to the man skilled in the art in consideration of the disclosure of the prior art named in the present proceedings, or they concern only minor modifications which lie within the normal practice of the man skilled in the art.
- 2.6 The subject-matter of independent claim 1 is novel over documents D1 and D2.

The claim differs from D1 in that a second deposition material (B) is deposited.

It would be obvious for the skilled person to modify the process with multiple plasma spray arrangements of D1 (see column 12, lines 1-5) in order to solve the problem of providing a process for depositing two materials.

Therefore, no inventive step can be recognised for the subject-matter of independent claim 1.

- 2.7 Dependent claims 2-33 do not appear to contain any additional features which, in

combination with the features of any claim to which they refer, involve an inventive step with respect to the prior art named in the present proceedings.

The reasons therefor are that the additional features of the said claims are either directly known from documents D1-D5, or is a combination of features obvious to the man skilled in the art in consideration of the disclosure of the prior art named in the present proceedings, or they concern only minor modifications which lie within the normal practice of the man skilled in the art.

3. Clarity

- 3.1 The term "heat conducting" used in claims 48 and 49 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claims unclear (Article 6 PCT).

4. Certain published documents (Rule 70.10 PCT)

| Application No<br>Patent No | Publication date<br>(day/month/year) | Filing date<br>(day/month/year) | Priority date (valid claim)<br>(day/month/year) |
|-----------------------------|--------------------------------------|---------------------------------|---|
| EP1365042                   | 26/11/2003                           | 21/05/2003                      | 21/05/2002                                      |